

## CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) An array composition comprising:
  - a) a substrate with a surface; and
  - b) a population of microspheres comprising at least a first and a second microsphere,  
wherein said first microsphere comprises a plurality of at least 100 different target analytes from a first individual, and  
wherein said first microsphere further comprises a first identifier binding ligand that identifies said plurality of different target nucleic acid molecules from said first individual,  
wherein said second microsphere comprises a plurality of at least 100 different target analytes from a second individual, and  
wherein said second microsphere further comprises a second, different identifier binding ligand that identifies said plurality of different target nucleic acid molecules from said second individual;  
wherein said microspheres are distributed on said surface.
2. (cancelled)
3. (cancelled)
4. (previously presented) The array composition according to claim 1, wherein said identifier binding ligands are nucleic acid molecules.
5. (cancelled)
6. (previously presented) The array composition according to claim 42, wherein said nucleic acid molecules comprise genomic DNA.
7. (cancelled)

8. (original) The array composition according to claim 1 wherein said substrate is a fiber optic substrate.

9. (original) The array composition according to claim 1 wherein said substrate is plastic.

10. (previously presented) The array composition according to claim 41, wherein said discrete sites are wells.

11 to 13. (cancelled)

14. (previously presented) The array composition according to claim 41, wherein said surface comprises about 10,000 to 1,000,000,000 discrete sites per cm<sup>2</sup>.

15. (cancelled)

16. (previously presented) The array composition according to claim 1, wherein said plurality of different target analytes are covalently attached to said microspheres.

17 to 24. (cancelled)

25. (previously presented) The array composition according to claim 41, wherein said surface comprises about 100,000 to 10,000,000 discrete sites per cm<sup>2</sup>.

26. (previously presented) The array composition according to claim 41, wherein said surface comprises about 10,000,000 to 1,000,000,000 discrete sites per cm<sup>2</sup>.

27. (previously presented) The array composition according to claim 41, wherein said surface comprises about 10,000 to 100,000 discrete sites per cm<sup>2</sup>.

28. (currently amended) A composition comprising a population of microspheres, said population comprising at least a first and a second microsphere,  
wherein said first microsphere comprises a plurality of at least 100 different target analytes from a first individual,

wherein said first microsphere further comprises a first identifier binding ligand that identifies said plurality of different target nucleic acid molecules from said first individual,

and wherein said second microsphere comprises a plurality of at least 100 different target analytes from a second individual,

wherein said second microsphere further comprises a second, different identifier binding ligand that identifies said plurality of different target nucleic acid molecules from said second individual.

29. (canceled)

30. (canceled)

31. (previously presented) The composition according to claim 28, wherein said identifier binding ligands are nucleic acid molecules.

32. (cancelled)

33. (previously presented) The composition according to claim 45, wherein said nucleic acid molecules comprise genomic DNA.

34 to 36. (cancelled)

37. (currently amended) The array composition according to claim 1, wherein said plurality of different target analytes from said first individual comprises about 2 to 100,000 at least 1000 different target analytes, and said plurality of different target analytes from said second individual comprises at least 1000 different target analytes.

38. (cancelled)

39. (currently amended) The array composition according to claim 1, wherein said plurality of different target analytes from said first individual comprises about 10 to 10,000 at least 10,000 different target analytes, and said plurality of different target analytes from said second individual comprises at least 10,000 different target analytes.

40. (currently amended) The array composition according to claim 1, wherein said plurality of different target analytes from said first individual comprises about 100 to 1000 at least 100,000 different target analytes, and said plurality of different target analytes from said second individual comprises at least 100,000 different target analytes.

41. (previously presented) The array composition according to claim 1, wherein said microspheres are distributed at discrete sites on said surface.

42. (previously presented) The array composition according to claim 1, wherein said target analytes are nucleic acid molecules.

43. (previously presented) The array composition according to claim 42, wherein said nucleic acid molecules are single-stranded.

44. (previously presented) The array composition according to claim 41, wherein said microspheres are randomly distributed.

45. (previously presented) The composition according to claim 28, wherein said target analytes are nucleic acid molecules.

46. (previously presented) The composition according to claim 45, wherein said nucleic acid molecules are single-stranded.

47. (previously presented) The composition according to claim 28, wherein said plurality of different target analytes are covalently attached to said microspheres.

48. (currently amended) The composition according to claim 28, wherein said plurality of different target analytes from said first individual comprises about 2 to 100,000 at least 1000 different target analytes, and said plurality of different target analytes from said second individual comprises at least 1000 different target analytes.

49. (currently amended) The composition according to claim 28, wherein said plurality of different target analytes from said first individual comprises about 10 to 10,000 at least 10,000 different target analytes, and said plurality of different target analytes from said second individual comprises at least 10,000 different target analytes.

50. (currently amended) The composition according to claim 28, wherein said plurality of different target analytes from said first individual comprises ~~about 100 to 1000 at least 100,000~~ different target analytes, and said plurality of different target analytes from said second individual comprises at least 100,000 different target analytes.